Abstract

RUNNING LOCOMOTION IN COMMON AND WATER ENVIRONMENT

Objectives: To offer a comprehensive view how to use various types of water running for training purposes. Summarize the significant differences between the water and classic running with orientation on physiology and biomechanics.

Methods: Review of current knowledge from the literature. Comparative analysis of deep water running and classic running with slow and high frequency from video recordings. The aim of analysis were changes in the angles of the hip (flexion and extension), knee (flexion) and the elbow (flexion) joint, forward bending of the trunk and stride length.

Results: During low stride frequency running is in the water greater knee (+ 41.2 °) and hip (+ 26.7 °) flexion, trunk more bent (+ 6.8 °) and stride is shorter (by 1.61). During high stride frequency running is in the water greater knee flexion (+ 32.9 °), greater trunk forward bending (+ 9.3 °) and shorter stride (by 1.71). At low frequency were changes between conditions in all subjects more similar than at high frequency. When comparing the water running at low and high frequency the forward bending of the trunk was greater at high frequency (+ 9.6 °) Other results were not conclusive.

Keywords: water running, physiology ,biomechanics